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IN THE CLAIMS

1. (Original) A hole drilling method, comprising:

combining water, abrasive particles, and a viscosity-enhancing material to form an abrasive suspension working fluid;

pressurizing the working fluid;

expelling the pressurized working fluid simultaneously through a plurality of nozzles to produce a plurality of high velocity coherent fluid jets; and

impinging the plurality of fluid jets simultaneously onto a plurality of target locations for a sustained time period until the fluid jets break through the target locations to form a plurality of holes.

2. (Original) The method of claim 1, wherein the pressurizing step comprises:

storing the working fluid in a fluid reservoir; and

conducting the working fluid from the reservoir to a pressurizing cylinder, wherein the pressurizing cylinder receives the working fluid at a first pressure and discharges the working fluid simultaneously through the plurality of nozzles at a second pressure, wherein the second pressure is greater than the first pressure.

3. (Original) The method of claim 1, wherein the viscosity-enhancing material used in the combining step is a long-chain polymer.

4. (Original) The method of claim 1, wherein the abrasive particles used in the combining step are made from a non-hygroscopic material.

5. (Original) The method of claim 4, wherein the abrasive particles are selected from the group consisting of garnet, alumina, silica, and silicon carbide.

6. (Original) The method of claim 1, further comprising varying a time/pressure profile in the expelling step to control a shape of at least one of said plurality of holes.

7. (Currently Amended) A jet head for a hole drilling system, comprising:

a block having a plurality of conduits;

a plurality of nozzles disposed in the plurality of conduits; and

a plenum to fluidically couple the plurality of nozzles to a feed tube to distribute fluid from the feed tube to said plurality of nozzles, and wherein said plurality of nozzles being positioned to form a plurality of distinct and separate holes in a work piece .

8. (Original) The jet head of claim 7, wherein the plurality of conduits are disposed substantially parallel to each other.

9. (Original) The jet head of claim 7, wherein at least one of the plurality of conduits are arranged at an angle with respect to a plane of the block.

10. (Original) The jet head of claim 7, further comprising a plurality of nozzle holders that removably hold the nozzles in said plurality of conduits.

11. (Original) The jet head of claim 10, wherein each of said plurality of nozzle holders has an outer diameter that is threaded and an inner diameter that holds one of said plurality of nozzles.

12. (Original) The jet head of claim 11, further comprising a lip extending from the inner diameter of the nozzle holder, wherein the lip locates the nozzle.

13. (Original) The jet head of claim 10, wherein at least one of said plurality of nozzles is brazed to at least one corresponding nozzle holder.

14. (Original) The jet head of claim 7, wherein at least one of said plurality of nozzles is a poly-crystalline diamond.

15. (Original) The jet head of claim 7, further comprising a cover attached to the block, wherein the cover has an opening to accommodate the inlet plenum.

16. The jet head of claim 7, wherein said plurality of nozzles includes at least one nozzle having an orifice of a first diameter and a second nozzle having an orifice of a second diameter different from the first diameter.

17. (Original) The jet head of claim 7, wherein each of said plurality of nozzles has an entrance with a first diameter that tapers toward an orifice with a second diameter smaller than the first diameter.

18. (Original) The jet head of claim 7, wherein said plurality of nozzles includes at least one nozzle having an orifice with a non-circular sectional area.

19. (Original) A hole drilling system, comprising:

a pressure vessel having an isolator that separates the pressure vessel into a control fluid chamber that houses a control fluid and a working fluid chamber that houses an abrasive suspension working fluid containing water, abrasive particles, and a viscosity-enhancing material;

a pressure source that pressurizes the control fluid in the pressure vessel to force the working fluid out of the pressure vessel; and

a jet head having a plurality of nozzles that expel the working fluid to produce a plurality of high velocity coherent fluid jets that simultaneously impinge a plurality of target locations for a sustained time period until the plurality of fluid jets break through the target location to form a plurality of holes.

20. (Original) The hole drilling system of claim 19, wherein the isolator comprises a floating piston.

21. (Original) The hole drilling system of claim 19, wherein the isolator comprises a diaphragm.

22. (Currently Amended) The hole drilling system of claim 19, further comprising a controller that controls operation of a ~~the~~ pump.

23. (Original) The hole drilling system of claim 22, wherein the controller controls the pump according to a time/pressure profile.

24. (New) The hole drilling system of claim 19, wherein said plurality of fluid jets being so positioned during the impinging step such that said plurality of the holes are separate from each other, with each of said plurality of holes defining a boundary, and said plurality of holes not being positioned within the boundary of another of said plurality of holes.

25. (New) The method of claim 1, wherein said plurality of fluid jets are positioned during the impinging step so that a plurality of the holes are separate from each other, with each of said plurality of holes defining a boundary, and said plurality of holes not being positioned within the boundary of another of said plurality of holes